



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,152	12/21/2001	Brian Scott Thornton	RR1732	8234
7590		06/04/2004		
Samuel A. Kassatly 6819 Trinidad Drive San Jose, CA 95120			EXAMINER DAVIS, DAVID DONALD	
			ART UNIT 2652	PAPER NUMBER 5

DATE MAILED: 06/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/026,152

Applicant(s)

THORNTON ET AL.

Examiner

David D. Davis

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 19-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 19-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4-9, 11, 19, 20, 22-27 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Ainslie et al (US 4,761,699). As per claims 1 and 19, Ainslie et al shows in figures 4 and 7 a slider assembly for use in a data storage system that includes slider 16 having air bearing surface (ABS) 20 and metalized backside 24. A flexure, shown in figure 7, is secured to slider 16 along backside 24 and formed of a plurality of layers 42, 43, 44, 47, 48, 83 and 50.

Pluralities of receptacles 60 are formed in a pattern, shown in figures 3, 5 and 7 through at least a first layer of the flexure. Pluralities of solder bumps 80 are deposited on slider backside 24 in a generally similar pattern to the pattern of the receptacles 60. Receptacles 60 and solder bumps 80 coincide when slider 16 and flexure are secured. Solder bumps 80 flow in corresponding receptacles 60 when heated to form a rigid mechanical connection of the slider 16 to the flexure, while also enabling slider 16 to be separated from the flexure.

As per claims 2 and 20, Figure 5 of Ainslie et al also shows the first layer of the flexure includes a metallic bond pad of 44 made of a material, copper, that is compatible with a fluxless solder process. As per claims 4 and 22, plurality of flexure layers includes a second and third layer. As per claims 5 and 23, second layer 42 includes a polyimide insulator layer that provides electrical insulation. As per claims 6 and 24, layer 42 includes a leading edge that is recessed

Art Unit: 2652

inward at a substantial distance relative to a leading edge tip of the flexure. As per claims 7 and 25, layer 43 includes stainless steel flexure tongue that provides resiliency to the slider assembly. As per claims 8 and 26, receptacles 60 include depressions that are formed through the first and second layers. As per claims 9 and 27, depressions of receptacles are generally cylindrically shaped, as shown in figure 3. As per claims 11 and 29, figure 7 of Ainslie et al shows a slider leading edge recessed relative to a leading edge tip of the flexure. The metallic bond pad includes an extension and a conductive adhesive is applied to the extension.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 3, 10, 21 and 28 and rejected under 35 U.S.C. 103(a) as being unpatentable over Ainslie et al (US 4,761,699). Ainslie et al discloses the claimed invention, see description supra.

Art Unit: 2652

However, Ainslie et al is silent as to the copper of the metallic bond pad being gold plated.

Ainslie et la is also silent as to the diameter being 75 microns.

Official notice is taken of the fact that gold plating is notoriously old and well known in the art.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to gold plate the copper bond pad of Ainslie et al as suggested in the art. The rationale is as follows: one of ordinary skill in the art at the time the invention was made would have been motivated to gold plate a bond pad to provide the optimal connection between the slider and the flexure.

It also would have been obvious to a person having ordinary skill in the art at the time the invention was made to specify the diameter of a depression of Ainslie et al to be 75 microns. The rationale is as follows: one of ordinary skill in the art at the time the invention was made would have been motivated to specify a diameter of depression, which is well within the purview of a skilled artisan and absent an unobvious result, to be 75 microns to provide an optimal diameter that would provide the best connection between the slider and the flexure.

Conclusion

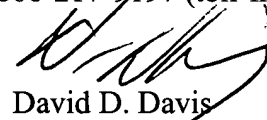
Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Davis whose telephone number is (703) 308-1503. The examiner can normally be reached on Monday thru Friday between 9:30-6:00.

Application/Control Number: 10/026,152
Art Unit: 2652

Page 5

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David D. Davis
Primary Examiner
Art Unit 2652

ddd